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Title : Role Specialization among foraging Bottlenose Dolphins (Tursiops truncatus) off Cedar Key, Florida

Category : Behavior

Student : Not Applicable

Preferred Format : Either Oral or Poster Presentation

Abstract : A division of labor with individual role specialization during group hunting is rare in mammals. In Cedar Key Florida, group hunting dolphins engage in two types of behaviors while herding mullet (Mugil cephalus). One individual in a group of three to six dolphins, the 'driver', herds the fish in circles, as well as towards the 'barrier' dolphins. The driver may perform fluke-slaps during the drive. Fish being herded in this fashion leap into the air where some are captured by driver and barrier dolphins. Repeated observations of two such feeding groups allowed us to test the hypothesis that individual dolphins herding fish specialize in the roles of driver and barrier, thus meeting the criteria for a division of labor with role specialization. The herding behavior was seen 155 times, and the driver was identified in 145 bouts, 93.5% of the time. Nineteen of the bouts with an identified driver involved a single dolphin driving without other dolphins present. These bouts were not included in analyses comparing drivers and non-drivers and are considered separately. The A group accounted for 60 and the B group 66 of the remaining 126 bouts. In all 60 A-group bouts the same dolphin (TLFN) was the driver and in all 66 B-group bouts the same dolphin (PNT) was the driver. This is significantly different from a distribution derived from a hypothesis that the driving individual is randomly selected for each bout. Aerial fish capture rates differed between groups as well as between the driver and barrier dolphins in one group but not the other. Differences in group stability or prey school size may have contributed to this difference.